

over half a century preceding the proposal of *Sericocarpus bifoliatus*. The synonymy of the species and of its doubtfully distinguishable variety with toothed leaves will then stand as follows:

SERICOCARPUS TORTIFOLIUS (Michx.) Nees, Gen. & Sp. Ast. 151. 1832.

Conyza bifoliata? Walt. Fl. Carol. 204. 1788 (erroneous identification of *C. bifoliata* L.).

Aster tortifolius Michx. Fl. Bor. Amer. 2: 109. 1803.

Aster scabrosus Bertol. Nov. Comm. Acad. Bonon. 8: 389. pl. 33.

("Misc. Bot. 6: 29. pl. 4.") 1846.

Sericocarpus bifoliatus (Walt.) Porter, Mem. Torr. Club 5: 322. 1894.

SERICOCARPUS TORTIFOLIUS var. COLLINSII (Nutt.) Torr. & Gray, Fl. N. Amer. 2: 103. 1841.

Aster Collinsii Nutt. Journ. Acad. Nat. Sci. Philad. 7: 82. 1834.

Sericocarpus Collinsii Nutt. Trans. Amer. Phil. Soc. II. 7: 302. 1840.

Sericocarpus bifoliatus var. *Collinsii* Blake, Proc. Amer. Acad. 51: 515. 1916.

BUREAU OF PLANT INDUSTRY, Washington, D. C.

TWO SUMMERS OF BOTANIZING IN NEWFOUNDLAND.

M. L. FERNALD.

(Continued from p. 204.)

TILLAEA AQUATICA L. Sandy and peaty margin of pond back of barrier beach, Argentia, Fernald, Long & Dunbar, no. 26,737, new to Newfoundland. See p. 86.

SAXIFRAGA RIVULARIS L. Wet quartzite rocks and seepy banks along upper Deer Pond Brook, Highlands of St. John, Fernald & Long, no. 28,453; wet mossy cliffs, lower Deer Pond Brook, Gilbert & Hotchkiss, no. 28,455; cool damp pockets in rocky crests, Cape Dégrat, Quirpon Island, Fernald & Long, no. 28,454. See pp. 116, 121. Previously reported only from St. Anthony.

S. STELLARIS L., var. COMOSA Poir. Crests of wet quartzite cliffs along upper Deer Pond Brook, Highlands of St. John, Fernald & Long, no. 28,464, new to Newfoundland. See p. 117.

PARNASSIA KOTZEBUEI C. & S. Mossy brooksides and damp turfy slopes, Sacred Island, Fernald & Long, no. 28,475; mossy and turfy trap cliffs and talus, Anse aux Sauvages, Pistolet Bay, Fernald, Wiegand & Long, no. 28,476; limestone cliffs, western face of Doctor

Hill, Highlands of St. John, *Fernald & Long*, no. 28,477; new to Newfoundland. See pp. 122, 123, 125.

P. PARVIFLORA DC. Extending northward on the West Coast to St. Barbe Bay. See p. 79.

PARNASSIA multiseta (Ledeb.), n. comb. *P. palustris*, β . *multiseta* Ledeb. Fl. Ross. i. 263 (1842).

Ledebour's only character for his *P. palustris*, β . *multiseta* was the numerous (15–23) setae or filaments to each staminodial scale. Ledebour cited two specimens, one collected by Frisch near Baschurov on the Argun River, the other collected by Rieder in Kamtchatka. Material of Rieder's collection is in the Gray Herbarium and in its petals as well as in the staminodial scales it is quite like the American plant which passes as *P. palustris* but unlike true *P. palustris* of Europe and much of Asia. The contrasts between the two are indicated below.

P. PALUSTRIS L. Calyx-lobes subcoriaceous, lanceolate, elliptic or narrowly obovate, obtuse, 4–7 mm. long, 7–13-nerved: petals rounded or emarginate at tip, conspicuously 7–13-nerved, with brownish lines: anthers 2.3–3 mm. long: staminodial scale longer than broad, abruptly contracted to a long narrow claw, with 9–15 filaments: capsule with a short slender beak: seeds linear-oblong, dark-brown.

P. MULTISETA (Ledeb.) Fern. Calyx-lobes subherbaceous, linear to lance-oblong, subacute, (4–) 6–11 mm. long, 3–7-nerved: petals narrowed to rounded, only rarely emarginate at tip, faintly 5–9-nerved, with paler lines: anthers 1.5–2.3 mm. long: staminodial scale as broad as or broader than long tapering to a short broad base, with 9–23 filaments: capsule beakless: seeds short-oblong to oval, pale-brown.

The following specimens of *P. multiseta* are before me.—LABRADOR: Flint Island, near Port Manvers, August 22, 1908, *Owen Bryant*; Hopedale, 1920, *W. W. Perrett*; Esquimaux Island, Hamilton Inlet, *Bowdoin College Exped.* no. 275. UNGAVA: Ungava River, *Spreadborough*, no. 14,280. NEWFOUNDLAND: brooksides on slaty hills back of Little Quirpon, *Fernald & Gilbert*, no. 28,481; marsh back of strand near Isthmus Cove, Pistolet Bay, *Wiegand, Gilbert & Hotchkiss*, no. 28,480; sandy, gravelly and turfy upper border of beach, Cook Point, Pistolet Bay, *Fernald, Gilbert & Hotchkiss*, no. 28,482; wet places, Flower Cove, August 2, 1920, *M. E. Priest*; turfy limestone barrens, Capstan Point, Flower Cove, *Fernald, Long & Dunbar*, no. 26,749; springy swale south of the Hospital, Flower Cove, *Fernald, Long & Dunbar*, no. 26,750; turfy limestone shore, St. Barbe, *Fernald, Long & Dunbar*, no. 26,751; turfy shore of Derby's Tickle, at mouth of Otter Pond Brook, Brig Bay, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,483. ONTARIO: Maitland, Huron Co., 1869, *W.*

White; Pic River, *Loring*; clay soil, Onaman River, Thunder Bay Distr., 1912, *Pulling*, MICHIGAN: Isle Royale, *Cooper*, no. 122. MANITOBA: Churchill, *J. M. Macoun*, no. 79,233. MINNESOTA: Turtle Lake, August, 1892, *Sheldon*; Clithwall, July, 1897, *Campbell*. NORTH DAKOTA: boggy meadows, Devil's Lake, July 30, 1838, *Nicollet*; low meadows, Turtle Mountains, July 23, 1902, *Lunell*. MACKENZIE: Slave River, July 30, 1892, *Elizabeth Taylor*. SASKATCHEWAN: without locality, 1858, *Bourgeau*; 20 miles west of Yorkton, *Herriot*, no. 70,747. ALBERTA: Milk River, *John Macoun*, no. 10,569; Banff, *Canby*, no. 85. BRITISH COLUMBIA: Rocky Mts. lat. 49° N., 1861, *Lyall*. YUKON: Whitehorse, *Eastwood*, no. 624; Dawson, 1896, *Kusche*; Carmacks, *Eastwood*, no. 570. ALASKA: along river, Skagway, *Eastwood*, no. 771; Kodiak, *Kellogg*, no. 226; Attu Island, *J. M. Macoun*, no. 86; lower Kuskakwim River, August, 1898, *F. C. Hinekley*; bank of Anvik River, *Chapman*, no. 22; near Fort Selkirk, Yukon River, *Schwatka*, no. 99; Fort Yukon, July 13, 1902, *H. E. Brooks*; Cape Blossom, 1884, *McLenegan*; Cape Nome, 1900, *Blaisdell*; St. Michaels, 1865-66, *Bannister*; Kotzebue Sound, *Chamisso*; Eschscholtz Bay, *Chamisso*. KAMTCHATKA: without locality, *Rieder* (co-type of *P. palustris*, β . *multisetata*); Bering Island, 1883, *Steineger*.

SIBBALDIA PROCUMBENS L. Wet quartzite rocks and gravel along brook, Southwest Gulch, Highlands of St. John, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,505, new to Newfoundland. See p. 124.

POTENTILLA PECTINATA Raf. Dry limestone cliffs, western face of Doctor Hill, Highlands of St. John, *Fernald & Long*, no. 28,517; otherwise known in Newfoundland only at Chimney Cove. See p. 125.

P. NIVEA L. Typical *P. nivea* with the leaflets griseous-sericeous above: dry rocky and gravelly limestone barrens, Cape Norman, *Wiegand, Griscom & Hotchkiss*, no. 28,525; limestone cliffs and ledges on western slope, under summit, Bard Harbor Hill, Highlands of St. John, *Wiegand, Gilbert & Hotchkiss*, no. 28,526; dry white limestone bluff opposite western escarpment of Bard Harbor Hill, *Fernald & Long*, no. 28,533. Previously collected on Pointe Riche and on Cape St. George. See p. 117.

P. NIVEA, var. MACROPHYLLA Ser. The commoner American variety, with dark-green upper leaf-surfaces. Dominant on calcareous cliffs, slopes and barrens from Sacred Bay to St. John Bay. Previously collected on Table Mt., Port-à-Port Bay. See p. 125.

POTENTILLA **usticapensis**, n. sp., caudex crassus multiceps caudiculis brevibus caespitose congestis stipulis peliis emortuis dense vestitis; caulibus floriferis procumbentibus subscaposis 1-9 cm. longis 1-3-floris villosio-lanatis; foliis radicalibus breviter petiolatis 1-2.5 cm. longis uni- vel bijugis; stipulis infimis flavido-brunneis aliquando

purpurascens scariosis glabris breviter adnatis auriculis anguste ovatis; foliolis superioribus duobus inferioribus multo majoribus cuneato-obovatis profunde incis, segmentis utrinque 2-3 lineari-oblongis obtusis margine revolutis subtus albis densissime villosolanatis vel tomentosissimis supra densissime villosolanatis vel glabrescentibus; calycibus villosolanatis 0.6-1 cm. latis 5-6 mm. longis, sepalis externis oblongis obtusis brevioribus quam internis anguste ovatis subacutis; petalis rotundato-obovatis apice truncatis vel emarginatis calyce vix longioribus ochroleucis; staminibus 20, filamentis vix 1 mm. longis, antheris subrotundatis 0.4 mm. longis; receptaculo breviter piloso; acheniis anguste ovoideis olivaceis 1.3-1.5 mm. longis numerosis, stylo subterminale 0.5-0.7 mm. longo basi papilloso-incrassato.—NEWFOUNDLAND: in gravel of dry limestone barrens, northern half of Burnt Cape, Pistolet Bay, July 17, 1925, Fernald, Wiegand, Pease, Long, Griscom, Gilbert & Hotchkiss, no. 28,518 (TYPE in Gray Herb.); dry gravel of limestone barrens, southern half of Burnt Cape, August 5, 1925, Fernald & Long, no. 28,519.

Very close to the arctic *P. pulchella* R. Br. and especially to var. *Sommerfeltii* (Lehm.) Th. Wolf (*P. Sommerfeltii* Lehm.). But those plants, which Wolf and the students of the floras of Spitzbergen and of Greenland merge as variants of one species, are characterized by long straight lustrous sericeous pubescence of leaves, stems and calyx, the pubescence of *P. usticapensis* being opaque and densely villous-lanate. *P. pulchella*, furthermore, has the segments of the leaflets narrower and more acute than in *P. usticapensis*; its sepals (both inner and outer) less obtuse; its petals yellow rather than creamy and its style-bases more papillose. On Burnt Cape the new species was associated in the dry limestone gravel with a remarkable series of highly localized species, including *Festuca supina* Schur, *Poa alpina* var. *brevifolia* Gaudin, *Carex glacialis* Mackenzie, *Arenaria cylindrocarpa* Fern., *Lesquerella arctica* (Wormsk.) Wats., *Braya americana* (Hook.) Fern. and *Crepis nana* Richardson; while in more turfy or peaty spots were *Carex concinna* R. Br., *Habenaria straminea* Fern., *Astragalus alpinus* L. and *A. eucosmus* Robinson, *Oxytropis foliolosa* Hook., *Arctostaphylos rubra* (Rehder & Wilson) Fern., *Antennaria eucosma* Fernald & Wieg., *A. albicans* Fern., *A. spathulata* var. *continentis* Fern. & St. John, and local species of *Arnica* and *Taraxacum*. See p. 103.

POTENTILLA NORVEGICA L., var. **labradorica** (Lehm.), n. comb. *P. labradorica* Lehm., Ind. Sem. Hort. Bot. Hamb. 1849: 12 (1849). *P. monspeliensis*, var. *labradorica* (Lehm.) Fernald, RHODORA, x. 50 (1908). *P. norvegica*, var. *hirsuta*, forma *labradorica* (Lehm.) Wolf,

Mon. Gatt. Pot. 404 (1908).—A fairly marked geographic variety. In Newfoundland known only from turfy shore, Big Brook, *Fernald & Long*, no. 28,536.

P. norvegica and *P. monspeliensis* were published by Linnaeus on the same page. They were maintained as varieties of *P. norvegica* by Lehmann in 1856 and it was apparently not until 1898 that they were united (by Rydberg) under the name *P. monspeliensis*. By the International Rules the name *P. norvegica* must stand.

P. ALPESTRIS Hall. f. Dominant on peaty or turfy calcareous slopes and barrens from Sacred Bay to Ingornachoix Bay; also on Cape St. George (*Mackenzie & Griscom*). See pp. 91, 98, 118.

ALCHEMILLA VULGARIS L., var. *VESTITA* (Buser) Fernald & Wiegand. Wet quartzite rocks and gravel along brook, Southwest Gulch, Highlands of St. John, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,580, the second station in Newfoundland. See pp. 54, 124.

ASTRAGALUS stragulus, n. sp., depressus, caulibus filiformibus ramosissimis repentibus stragulos 3–4 dm. diametro formantibus; ramulis filiformibus adscendentibus 0.3–1.7 dm. longis glabris vel sparse strigosis; stipulis oblongo-lanceolatis vel ovatis 2–4 mm. longis; foliis petiolatis divergentibus, petiolis rhachibusque compresso filiformibus strigosis 2–6 cm. longis, foliolis 4–9-jugis ellipticis retusis 0.2–1 cm. longis 1–5 mm. latis glabris vel subtus strigosis; pedunculis filiformibus axillaribus 0.2–9 cm. longis glabris vel strigosis; floribus lilacinis patentibus 1–10, racemo sub anthesi congesto fructifero plus minusve laxo 1–4 cm. longo; bracteis subscariosis lanceolato-attenuatis nigro-strigosis pedicellum brevissimum superantibus; calycibus nigro-strigosis dentibus anguste deltoideis vel lanceolatis subulato-attenuatis brevioribus 1–2 mm. longis, tubo oblique campanulato 2.5–3 mm. longo; corollis 0.8–1.2 cm. longis; vexillo rotundato-obovato obcordato 0.8–1 cm. longo 7–8 mm. lato; alis cum ungue 4–5 mm. longis, lamina anguste obovata ungue duplo longiore superne 2.5 mm. lata basi auriculata, auricula oblonga obtusa 1 mm. longa; carinis 9–10 mm. longis lamina unguem aequante subacutis apice 2 mm. latis; ovario hirtello, legumine sessile vesicario oblongo-ovoideo nigro-strigoso 6–8 mm. longo 2.5–4 mm. diametro uniloculari apiculato, apiculo erecto; seminibus 5–8 inequilateralibus olivaceis vel brunneis 1.3–1.8 mm. longis.—NEWFOUNDLAND: sandy and turfy upper border of limestone beach, Cook Point, Pistolet Bay, July 18, 1925, *Fernald & Gilbert*, no. 28,583; August 13, 1925, *Fernald, Gilbert & Hotchkiss*, no. 28,584 (TYPE in Gray Herb.).

A beautiful species of the subgenus *Homalobus*, forming dense carpets and very attractive when in flower, the peduncles varying from only a few millimeters to nearly a decimeter in length, and bearing, when well developed, close racemes of lilac flowers. *A.*

stragulus is closely related to *A. yukonis* Jones, Revis. N. A. Astrag. 89 (1923), a species of similar habit from the Yukon. Jones's description is very contradictory, he stating in the key that *A. yukonis* has "Leaves sessile, very many. Leaflets 6-8 pairs," but in the detailed description "Leaves. . . all rather long-petioled Leaflets 3-5 pairs." Fortunately one of the numbers he cites, *Eastwood*, no. 626, is before me and this differs in many details from *A. stragulus*. Its leaflets are fewer, in Miss Eastwood's material ranging from 3-6 pairs, narrower, cinereous and only exceptionally retuse (in *A. stragulus* 4-9 pairs, retuse, and glabrous above); its peduncles are all elongate, 0.5-1 dm. long (in *A. stragulus* very variable, 0.2-9 cm. long); the racemes promptly becoming lax and remotely flowered (in *A. stragulus* only the lowest flowers becoming slightly remote in age); the flowers smaller and strongly ascending (the larger flowers of *A. stragulus* widely divergent); the standard only about 5 mm. long and with strongly revolute margins (the flat and broader standard of *A. stragulus* 0.8-1 cm. long); the keel much shorter but with a longer and obtuse erect tip; the pods said to be 2-3-seeded, the tip not strongly bent upward (in *A. stragulus* the 5-8-seeded pod with the point abruptly upturned and erect). See p. 106.

ASTRAGALUS ALPINUS L. Dry limestone barrens, northern half of Burnt Cape, *Fernald, Wiegand, Pease, Long, Griscom, Gilbert & Hotchkiss*, no. 28,585; turfy and rocky slopes, Quirpon Island, *Wiegand Gilbert & Hotchkiss*, no. 28,586, *Fernald & Long*, no. 28,587; previously known in Newfoundland only from Chimney Cove. See pp. 104, 121.

A. EUCOSMUS Robinson. Dominant on turfy slopes and barrens or on slate, trap or limestone talus and gravel from Quirpon Island to Boat Harbor. See p. 104. The corolla is normally deep-violet but it is, exceptionally, white in

A. EUCOSMUS, forma **albinus**, n. f., petalis lacteis.—NEWFOUNDLAND: springy meadow at base of Ha-Ha Mountain, Ha-Ha Bay, July 17, 1925, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,588 (TYPE in Gray Herb.).

In typical *A. eucosmus* the calyx is densely strigose with usually dark hairs, but on the banks of the Exploits River in east-central Newfoundland there occurs an extreme with glabrous calyx. This may be distinguished as

A. EUCOSMUS, var. **facinorum**, n. var., a forma typica recedit floribus remotis, calycibus glabris.—NEWFOUNDLAND: ledges and talus, north bank of Exploits River below the falls, Grand Falls, July 3,

1911, *Fernald, Wiegand, Bartram & Darlington*, no. 5795 (TYPE in Gray Herb.).

A. *BLAKEI* Eggleston. Limestone cliffs, ledges and talus, western escarpments of Bard Harbor Hill, Highlands of St. John, *Wiegand, Gilbert & Hotchkiss*, no. 28,597; *Fernald & Long*, no. 28,593; a species of northern New England new to Newfoundland. See p. 117.

OXYTROPIS FOLIOLOSA Hook. Dry gravelly limestone barrens, northern half of Burnt Cape, *Fernald, Wiegand, Pease, Long, Griscom, Gilbert & Hotchkiss*, no. 28,599; dry limestone gravel, Schooner (Brandy) Island, *Pease & Long*, no. 28,600; sandy and turfy upper border of limestone beach, Cook Point, *Fernald & Gilbert*, no. 28,601; the first from east of the Rocky Mts. See pp. 103, 105, 106.

O. *CAMPESTRIS* (L.) DC., var. *JOHANNENSIS* Fernald. Not previously recognized from Newfoundland, though already collected. The Newfoundland specimens are as follows. Dry crests of trap cliffs, Anse aux Sauvages, Pistolet Bay, *Fernald, Wiegand & Long*, no. 28,604; shelves, crests and talus of diorite cliffs, Ha-Ha Mountain and Ha-Ha Point, *Pease & Griscom*, no. 28,602, *Fernald & Long*, no. 28,603; dry limestone cliffs and talus, western face of Doctor Hill, Highlands of St. John, *Fernald & Long*, no. 28,605; conglomerate limestone and calcareous sandstone cliffs and ledges, Cow Head, *Fernald & Wiegand*, no. 3633; high sea-cliffs, Chimney Cove, *Waghorne*. See pp. 104, 125.

HEDYSARUM ALPINUM L. Dominant on turfy or peaty slopes or on calcareous cliffs and talus the length of the Straits from Quirpon Island to Savage Cove. See pp. 76, 104. Previously known from Cow Head and from the limestones of Port-à-Port and Cape St. George.

H. *ALPINUM*, var. *AMERICANUM* Michx. Calcareous cliffs and talus, western escarpments of Doctor Hill and Bard Harbor Hill, Highlands of St. John, *Fernald & Long*, nos. 28,626, 28,627, the first from north of Bay of Islands. See p. 125.

LATHYRUS MARITIMUS (L.) Bigel., var. *ALEUTICUS* Greene. Gravelly and turfy strand near Isthmus Cove, Pistolet Bay, *Wiegand, Gilbert & Hotchkiss*, no. 28,631, the first from south of Labrador. See p. 120.

CALLITRICHE HETEROPHYLLA Pursh. Pools near the eastern end of the Straits, from Quirpon Island to Sacred Island, an extension north from the Exploits. See p. 120.

C. *HERMAPHRODITICA* L. (*C. autumnalis* L.). In dead water near tide-limit, East Brook, St. Barbe Bay, *Wiegand & Hotchkiss*, no. 28,643, the first station north of the Humber. See p. 127.

NEMOPANTHUS MUCRONATA (L.) Trel. Local and scarce on slopes of the Highlands of St. John, our first stations north of Bay of Islands.

ACER SPICATUM Lam. Slopes of the Highlands of St. John, our first stations north of Bonne Bay.

VIOLA NEPHROPHYLLA Greene. Common in damp peaty soil, northward to the Straits. See p. 90.

V. SELKIRKII Pursh. Peaty slopes and woodland knolls, Quirpon Island and Highlands of St. John, extensions northward from Bay of Islands.

V. PALUSTRIS L. Swale at mouth of Eddies Cove Brook, *Fernald, Wiegand & Long*, no. 28,662, the first Newfoundland station. See p. 108.

V. RENIFOLIA Gray. Thickets bordering limestone barrens, southern half of Burnt Cape, *Fernald & Long*, nos. 28,666, 28,667, the first from Newfoundland, where var. BRAINERDII (Greene) Fern. is generally distributed along the West Coast. See p. 120.

EPILOBIUM ANGUSTIFOLIUM L., var. INTERMEDIUM (Wormsk.) Fern. Turfy clearings and pastures, Quirpon Island, *Fernald & Long*, no. 28,676; previously known in Newfoundland only from Grand Lake.

E. NESOPHILUM Fern. Mossy larch swamp on flat north of Doctor Hill, St. John Bay, *Fernald & Wiegand*, no. 28,684, northern extension from the Exploits Valley. See p. 127.

E. PYLAIEANUM Fern. RHODORA, xxvii. 33 (1925). Widely dispersed in southern Newfoundland. For citation of specimens see Fern., l. c. See p. 84.

E. PALUSTRE L., var. MANDJURICUM Hausskn. Springy swamp, Sandy Cove, Ingornachoix Bay, *Fernald, Long & Dunbar*, no. 26,860; glades and wet woods near base of Bard Harbor Hill and boggy limestone strand, Bard Harbor, St. John Bay, *Fernald & Long*, no. 28,696, *Wiegand & Gilbert*, no. 28,699; the first records from America. See p. 80.

E. PALUSTRE, var. LABRADORICUM Hausskn. Mossy barren hillside back of Cape Ray, *Fernald, Long & Dunbar*, no. 26,856; wet slaty cliffs, John Kanés's Ladder, western face of Doctor Hill, Highlands of St. John, *Fernald & Long*, no. 28,686a; previously known in Newfoundland only from tundra at Little River, *Mackenzie & Griscom*, no. 11,191.

E. PALUSTRE, var. LAPPONICUM Wahlenb. Dripping mossy quartzite cliffs and ledges, upper Deer Pond Brook, Highlands of St. John, *Fernald & Long*, nos. 28,697, 28,698; springy ditch bordering spruce thicket, Savage Cove, *Fernald & Long*, no. 28,701; new to Newfoundland. See p. 116.

E. WYOMINGENSE A. Nels. Swales, bogs and glades on limestones of the West Coast: Flower Cove, *Fernald, Long & Dunbar*, nos. 26,857. 26,859; Brig Bay, *Fernald, Long & Dunbar*, no. 26,858; Ingornachoix Bay, *Fernald & Wiegand*, no. 3728; Cow Head, *Fernald & Wiegand*, no. 3727; Cape St. George, *Mackenzie & Griscom*, no. 10,355; the first records from east of the Rocky Mts. See p. 60.

E. DAVURICUM Fisch. Peaty and turfy brooksides, borders of pools or damp depressions in limestone barrens, Quirpon Island to St. John Island: Quirpon Island, *Fernald & Long*, no. 28,708; Big Brook, *Pease & Griscom*, no. 28,703; Sandy (Poverty) Cove, *Fernald, Long &*

Gilbert, no. 28,706; Savage Cove, *Fernald, Pease & Long*, no. 28,704; St. John's Island, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,707; the first from eastern America. See pp. 100, 118.

E. LEPTOCARPUM Hausskn., var. (?) *MACOUNII* Trel. Gravelly shore of pond in limestone rock-barrens near Rock Marsh, Flower Cove, *Fernald, Pease & Long*, no. 28,705; wet peat along trail in coniferous woods, lower southwestern slope of Bard Harbor Hill, Highlands of St. John, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,687; the first in eastern America. See p. 109.

E. BREVISTYLUM Barbey. Springy slopes and brooksides at head of Mauve Bay, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,720; springy ditch bordering spruce thicket, Savage Cove, *Fernald & Long*, no. 28,713; the first in eastern America. See p. 123.

E. BOREALE Hausskn. Springy ditch bordering spruce thicket, Savage Cove, *Fernald & Long*, no. 28,712; glades and rich thickets, slopes of Bard Harbor Hill, Highlands of St. John, *Fernald & Long*, nos. 28,719, 28,722, 28,723; bushy swale on flat north of Doctor Hill, St. John Bay, *Fernald & Wiegand*, no. 28,721. Except for stations in the Shickshock Mts. these are the first in eastern America. See p. 117.

E. DRUMMONDII Hausskn. Turfy slope near mouth of Big Brook, *Fernald & Long*, no. 28,725; mossy glades and banks, Eddies Cove *Fernald, Wiegand & Long*, no. 28,726; springy mossy bank, Savage Cove, *Fernald, Long & Gilbert*, no. 28,727. A Rocky Mountain species heretofore known in the East only from the Torngat Mts. of Labrador and Tabletop Mts., Gaspé. See pp. 99, 108.

EPILOBIUM scalare, n. sp., perenne, rhizomate elongato obliquo crassiusculo, ad collum gemmas bulbiformes sessiles hypogaeas obovoideas 5–10 mm. longas edente; caule e basi arcuata erecto 0.5–3.5 dm. alto crasso simplici vel plerumque in parte media superiore ramoso, ramis perbrevisibus arcte adscendentibus fastigiatis, glabro subdense foliato multifloro, lineis 2 elevatis pilosiusculis e marginibus foliorum decurrentibus notato; foliis inferioribus oppositis reliquis alternatis subapproximatis pallide viridibus subcarnosis utrinque glaberrimis patentibus vel reflexis ellipticis vel anguste oblongo-ovatis breviter petiolatis basi rotundatis vel angustatis apicem versus angustatis subacutis mediis 3–6 cm. longis 1.2–2.5 cm. latis margine denticulis minimis callosis vix repandis munitis; alabastris anguste ovoideis subacutis basi sparse pilosis; floribus erectis 5–6 mm. longis; calycis laciniis ovato-lanceolatis acutiusculis tubo crispo-piloso; petalis purpureis calyce $\frac{1}{3}$ longioribus; stigmatibus clavatis; capsulis junioribus crispo-pilosis glabratis deinde 4–6 cm. longis pallide viridibus, pedicellis brevissimis 2–3 mm. longis; seminibus anguste ovoideo-oblongis apice pellucido-appendiculatis basin versus sensim attenuatis acutis 1.4 mm. longis, 0.4 mm. latis, testa tenuiter denseque papillosa.—NEWFOUNDLAND: wet slaty cliffs, John Kanés's Ladder, western face

of Doctor Hill, Highlands of St. John, August 24, 1925, *Fernald & Long*, no. 28,728 (TYPE in Gray Herb.).

Nearest related to *E. saximontanum* Hausskn. of the cordilleran region of northwestern America. That, however, as described by Haussknecht, has a slender rhizome (in *E. scalare* rather thick and stout); simple stem "a span" high (in *E. scalare* fastigate or bushy-branched and taller); remote leaves only 2–3 cm. long and at most 1 cm. wide (in *E. scalare* 3–6 cm. long, 1.2–2.5 cm. wide); the buds and calices glabrous (in *E. scalare* crisp-pilose), the petals pale (in *E. scalare* purple); and the young capsules glabrous (in *E. scalare* crisp-pilose). The seeds of *E. scalare* are apparently very similar to those of *E. saximontanum*. The latter species is not well represented in American herbaria, and I have been forced to interpret it merely from Haussknecht's description.

Epilobium scalare may eventually prove to be identical with *E. saximontanum* or some species of northwestern America; but I have been unable to place it satisfactorily with any of them. The flora of western Newfoundland is rich in *Epilobium*—seventeen species and ten varieties thus far known—and these include besides the circumpolar species such western American types as *E. wyomingense* A. Nelson, *E. boreale* Hausskn., *E. brevistylum* Barbey, *E. Drummondii* Hausskn., *E. leptocarpum* var. *Macounii* Trel., and *E. Behringianum* Hausskn. See p. 126.

E. LACTIFLORUM Hausskn. Brooksides on slaty hills back of Little Quirpon, *Fernald & Gilbert*, no. 28,730; mossy brooksides, Sacred Island, *Fernald & Long*, no. 28,731; cold wet chimneys in trap cliffs, Anse aux Sauvages, Pistolet Bay, *Fernald, Wiegand & Long*, no. 28,732; wet quartzite rocks and seepy banks along upper Deer Pond Brook and in Southwest Gulch, Highlands of St. John, *Fernald & Long*, no. 28,739, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,733; new to Newfoundland. See pp. 117, 122.

E. BEHRINGIANUM Hausskn. Springy mossy bank, Savage Cove, *Fernald, Long & Gilbert*, no. 28,734; a species of northeastern Asia and adjacent Alaska, here found for the first time in eastern America. See p. 109.

E. ALPINUM L. (*E. anagallidifolium* Lam.). Glades and damp thickets, northern half of Burnt Cape, *Fernald, Wiegand, Pease, Long, Griscom, Gilbert & Hotchkiss*, no. 28,736, new to Newfoundland. See p. 103.

MYRIOPHYLLUM ALTERNIFLORUM DC. Frequent from Brig Bay to Savage Cove, an extension northward from Bay of Islands. See p. 127.

M. EXALBESCENS Fern. Common from Brig Bay to Pistolet Bay, an extension north from Pointe Riche. See p. 127.

SANICULA MARILANDICA L., var. **borealis**, n. var. a var. *typica* recedit floribus stamineis majoribus sepalis 1.3–2 mm. longis pedicellis crassis subereo-angulatis vel -clavatis; fructu 6–8 mm. longo.— Newfoundland to northern New York. NEWFOUNDLAND: spruce thickets, Boat Harbor, Straits of Belle Isle, July 19, 1925, *Fernald, Wiegand & Long*, no. 28,765; meadow below limestone escarpment, western face of Bard Harbor Hill, Highlands of St. John, August 27, 1925, *Fernald & Long*, no. 28,766; damp talus of limestone sea-cliffs, Pointe Riche, August 4, 1910, *Fernald & Wiegand*, no. 3765; wet runs and boggy spots, Ingornachoix Bay, August 2, 1910, *Fernald & Wiegand*, no. 3764; marsh at base of Gros Morne, Bonne Bay, August 13 and 14, 1919, *R. H. Kimball*, no. 74; park-like openings in woods, Birchy Cove (Curling), July 21, 1910, *Fernald & Wiegand*, no. 3763; woods, Wild Cove, July 16, 1896, *Waghorne*; banks of Exploits River near Badger Brook, August 13, 1894, *B. L. Robinson*; ledges and talus, Grand Falls, July 22, 1911, *Fernald, Wiegand, Bartram & Darlington*, no. 5950; shaded bank of Salmon River, Glenwood, July 12, 1911, *Fernald, Wiegand & Darlington*, no. 5951; damp bushy ravine in limestone tableland, Table Mountain, Port-à-Port Bay, August 16, 1910, *Fernald & Wiegand*, no. 3766. QUEBEC: alluvial woods, St. John (or Douglstown) River, August 23, 1904, *Collins, Fernald & Pease*; alluvial thickets and woods near mouth of Dartmouth River, August 26 and 27, 1904, *Collins, Fernald & Pease* (TYPE in Gray Herb.); dans la prairie au sommet des falaises du Gros-Ruisseau, Rivière-aux-Rénards, Jul. 14, 1923, *Victorin et al*, no. 17,318; coniferous forest, "Low's Trail" from River Ste. Anne des Monts to Table-Topped Mt., August 14, 1906, *Fernald & Collins*, no. 678; alluvium of Bonaventure River, August 4–8, 1904, *Collins, Fernald & Pease*; alluvial thickets, Little Cascapedia River, July 29 and 30, 1904, *Collins, Fernald & Pease*; Matane River, August 5, 1904, *F. F. Forbes*; Little Métis, August 16, 1906, *Fowler*; shore of Lake Temiscouata, August, 1914, *Victorin*, no. 518; Lower Caché River, Lac Tremblant, August 2, 1922, *Churchill*. PRINCE EDWARD ISLAND: swampy woods, Tignish, August 6, 1912, *Fernald, Long & St. John*, no. 7852. NEW BRUNSWICK: cliffs, St. John River, Connors, July 13, 1903, *Pease*, no. 2260; Little Island, Shediac Bay, August 5, 1914, *Hubbard*. MAINE: Fort Fairfield, July 16, 1902, *Williams, Collins & Fernald*. NEW YORK: Canton, July 17, 1914, *Phelps*, no. 726.

In typical *Sanicula marilandica* of the eastern United States and the southern edges of Canada the staminate flowers are smaller, with sepals 1–1.5 mm. long, the pedicels filiform and usually more elongate than in the northern extreme, and the fruits average slightly shorter, varying from 5–7 mm. in length. Var. *borealis* usually has a tendency

to firmer or somewhat fleshy or leathery leaves; but in none of the characters is it absolutely separable. In northern New England some of the plants are transitional, but all the material from farther north, in Gaspé and Newfoundland, seems fairly constant in its thickened pedicels and larger calyx and, when mature, in its usually larger fruit.

OSMORHIZA DIVARICATA Nutt. Alluvial woods north of Doctor Hill, St. John Bay, *Fernald & Long*, no. 28,771, new to Newfoundland. See p. 125.

CICUTA BULBIFERA L. Locally in swales along the Straits from Flower Cove to Boat Harbor, an extension north from Bay of Islands.

Heracleum Sphondylium L. A dominant weed of fields and fence-rows, Trepassey, *Fernald, Long & Dunbar*, no. 26,886. See p. 84.

CONIOSELINUM GMELINI (Bray) Steud. Nom. ed. 2, i. 403 (1840). *Selinum Gmelini* Bray, Denkschr. Bot. Ges. Regensb. i. pt. 2: 36 (1818).

Certain collections from Newfoundland and the Gaspé Peninsula, with the upper stipules gradually narrowed from base to summit, rather than broadly dilated as in *C. chinense* (L.) BSP., and with the leaves very finely dissected, seems to be quite inseparable from the plant of arctic Eurasia which there regularly passes as *C. Gmelini* (see p. 117). *C. Gmelini* (Bray) Steud. is quite distinct from the plant of western North America which was christened *C. Gmelini* (C. & S.) Coult. & Rose, Cont. U. S. Nat. Herb. vii. 150 (1900), based upon *Ligusticum Gmelini* Cham. & Schl. Linnaea, i. 391 (1826). In view of Steudel's combination, properly made in a well-known work and clearly listed in *Index Kewensis*, there was no call for the later combination. The plant of western America, which has larger fruits and much longer and coarser involucels than *C. Gmelini* (Bray) Steud., should be called

CONIOSELINUM Benthami (Wats.), n. comb. *Selinum Benthami* Wats. Bibl. Ind. 432 (1878). *Ligusticum Gmelini* Cham. & Schl. Linnaea, i. 391 (1826). *C. Gmelini* Coult. & Rose, Contrib. U. S. Nat. Herb. vii. 150 (1900), not Steud. (1840).

The specific characters in *Conioselinum* are not well worked out but everyone who has watched the genus in the region of Gaspé and Newfoundland realizes that with us it is a complex group. In this region there seem to be at least four species: *C. chinense* (L.) BSP., *C. Gmelini* (Bray) Steud., *C. pumilum* Rose, and a fourth species (known from a single collection from Tabletop Mts., Gaspé) with

coarse and elongate involucels, near to if not identical with *C. Benthami* (Wats.) Fern. of Alaska; but until more time can be given to study of their technical characters it is wisest to defer the presentation of a formal key to them.

ANGELICA laurentiana, n. sp., *A. atropurpureae* similis; caulibus 1–2 m. altis viridibus vix purpurascentibus glabris; segmentis terminalibus foliorum imorum valde confluentibus; umbellis hemisphericis primariis 1.3–2.5 dm. latis radiis 28–45 subrigidis crassis dense griseo-puberulis floribus exclusis 5–10 cm. longis; involucellis nullis vel bracteis lineari-setaceis vel lineari-oblongatis pedicellos subaequantibus vel superantibus; pedicellis maturis 0.6–1.4 cm. longis griseo-puberulis: fructu late oblongo vel oblongo-suborbiculato basi apiceque rotundato 5.5–10.5 mm. longo glabro; jugis tribus dorsalibus alatis, alis dorsalibus laterales subaequantibus.—Northwestern Newfoundland and eastern Saguenay County, Quebec. NEWFOUNDLAND: trap cliffs and talus, Anse aux Sauvages, Pistolet Bay, August 11, 1925, *Fernald, Wiegand & Long*, nos. 28,784 (TYPE in Gray Herb.), 28,785; rocky meadows and brook-bottoms, upper Deer Pond Brook, Highlands of St. John, July 28, 1925, August 20, 1925, *Fernald & Long*, nos. 28,782, 28,783. QUEBEC: meadow, Tabatière, Boishébert, August 14, 1915, *St. John*, no. 90,626 (distributed as *Coelopleurum actaeifolium*).

Angelica laurentiana is at once distinguished in mature fruit from *A. atropurpurea* L. by the thin wings of the dorsal ridges, the dorsal ridges in *A. atropurpurea* being low, blunt-edged and wingless. In *A. atropurpurea* the ripe fruit is 5.5–7.5 mm. long, in *A. laurentiana* it may be as short but is commonly 8–10.5 mm. long. In *A. atropurpurea* the stem is usually suffused with purple and the umbels are inclined to be spherical, with the outer rays strongly reflexed, and the upper segments of the lowest leaves are commonly distinct or only slightly confluent. In *A. laurentiana* the stem may be purplish but it is more commonly green; the rays of the umbel ascend or are at most horizontally divergent and the upper segments of the lowest leaves are strongly confluent. In *A. atropurpurea* the involucels, when present, are commonly much shorter than the pedicels; in *A. laurentiana* they are often nearly as long as or even longer than the pedicels.

In its fruit *A. laurentiana* is nearer to *A. ampla* A. Nelson of the Rocky Mountain region of Wyoming and Colorado; but the latter has the fruits smaller and with lower scarcely winged dorsal ridges. In their key Coulter & Rose¹ define *A. atropurpurea* as having “In-

¹ Contrib. U. S. Nat. Herb. vii. 154 (1900).

florescence glabrous" and in their detailed description states that the umbel is "15 to 25-rayed." Such an account is difficult to reconcile with the plants, for every specimen of *A. atropurpurea* in the Gray Herbarium and the herbarium of the New England Botanical Club has the rays and pedicels copiously puberulent and the primary or leading umbels all have 22–46 rays.¹ See p. 117.

PYROLA SECUNDA L., forma **eucycla**, n. f., a f. typica recedit foliis rotudatis vel rotundo-ellipticis.—NEWFOUNDLAND: mossy spruce woods north of Doctor Hill, St. John Bay, August 24, 1925, *Fernald & Long*, no. 28,801.

Forma *eucycla* is an extreme form of *P. secunda*, var. *vulgaris* Herder, and should not be confused with var. *obtusata* Turcz. Typical *P. secunda* has the bracts at the base of the stem lanceolate, strongly involute and firm; the firm leaf-blades dark-green and rather lustrous, crenate-serrate, 1.5–6 cm. long; the scapes 1–2 dm. high; racemes 6–20-flowered, in anthesis 2–5, in fruit up to 8.5 cm. long; the petals greenish-yellow; the mature style 5–9 mm. long. The usually very distinct var. *obtusata* differs in having the basal bracts oblong to ovate, but slightly involute, membranaceous; the leaf-blades membranaceous, pale-green, hardly lustrous, crenate, 0.8–3 cm. long; the scapes 0.5–1.5 dm. high; the racemes 2–10-flowered, in anthesis 0.5–3, in fruit up to 4 cm. long; petals creamy-white; mature style 4–6 mm. long.

In all its technical points forma *eucycla* belongs with typical *P. secunda*, which, however, has the leaves narrowed at tip.

RHODODENDRON CANADENSE (L.) BSP. Shrubby barren near the Yellow Marsh back of Bard Harbor, St. John Bay, *Gilbert & Hotchkiss*, no. 28,824, an extension north from Bay of Islands.

PHYLLODOCE CAERULEA (L.) Bab. Abundant on peaty and turfey quartzite, upper slopes of Bard Harbor Hill, Highlands of St. John, the third Newfoundland station. See p. 116.

CASSIOPE HYPNOIDES (L.) D. Don. Turfy and mossy quartzite rocks along Mans Humbug Brook, Highlands of St. John, very scarce, *Fernald & Long*, no. 28,839, the second Newfoundland station. See p. 124, where I spoke of it as new to Newfoundland, overlooking Eames & Godfrey's discovery of it on Blomidon.

ARCTOSTAPHYLOS RUBRA (Rehder & Wilson) Fernald. Turfy or peaty limestone barrens along the Straits: Burnt Cape, *Fernald, Wiegand, Pease, Long, Griscom, Gilbert & Hotchkiss*, no. 28,853,

¹ The first station cited by Coulter & Rose is likewise difficult to reconcile with geographic fact: "VERMONT: Alpine region of the White Mountains, *Oakes*."

Fernald & Long, no. 28,855; Cape Norman, *Wiegand, Griscom & Hotchkiss*, no. 28,854, *Wiegand & Long*, no. 28,856; Big Brook, *Fernald & Long*, no. 28,852; Yankee Point, *Fernald, Wiegand & Long*, no. 28,857; new to Newfoundland. See p. 99.

VACCINIUM NUBIGENUM Fernald. Dry scrub at margin of quartzite barren near summit of Bard Harbor Hill and heathy banks near upper Deer Pond Brook, Highlands of St. John, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,872, *Fernald & Long*, nos. 28,873, 28,874; previously known only from the Shickshock Mts. See pp. 116, 124.

V. OVALIFOLIUM Sm. Open spruce thickets, Boat Harbor, *Fernald, Wiegand & Long*, no. 28,875; abundant in the thickets and gulches of the Highlands of St. John. See pp. 107, 116, 124. Previously known on the North Peninsula only from Croque (*Banks, LaPylaie*).

STATICE LABRADORICA (Wallr.) Hubb. & Blake, var. SUBMUTICA Blake. Dominant on limestone barrens from Pistolet Bay to St. John Bay; previously known on the West Coast south to Lewis Hills.

PRIMULA FARINOSA L. Fairly typical *P. farinosa* is represented by specimens from crests of trap cliffs, Sacred Island, *Wiegand, Gilbert & Hotchkiss*, no. 28,908; turf and peaty pockets in limestone ledges, Sandy (Poverty) Cove, *Fernald, Long & Dunbar*, no. 26,955; Flower Cove, *M. E. Priest*, no. H1. See pp. 60, 75.

P. FARINOSA, var. AMERICANA Torr. Wet limestone ledges and gravel near the sea, St. Barbe, *Fernald, Long & Dunbar*, no. 26,956.

P. FARINOSA, var. INCANA (M. E. Jones) Fern. Turfy limestone barrens, northern half of Burnt Cape, *Fernald, Wiegand, Pease, Long, Griscom, Gilbert & Hotchkiss*, no. 28,905; gravelly limestone shore, Schooner (Brandy) Island, *Pease & Long*, no. 28,907; limestone barrens, Yankee Point, *Wiegand, & Hotchkiss* no. 28,904; turf limestone barrens, Dog Peninsula, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,913.

P. FARINOSA, var. MACROPODA Fern. Abundant on the West Coast

P. SIBIRICA Jacq., var. ARCTICA Pax. Gravelly and peaty limestone barrens back of Big Brook, *Fernald & Long*, no. 28,915; sandy and gravelly margin of Big Brook, *Fernald, Wiegand, Long & Gilbert*, no. 28,916; swale near mouth of brook, Watts Bight, *Pease, Griscom, Gilbert & Hotchkiss*, no. 28,901; wet banks, turf limestone barrens, Cape Norman, *Wiegand, Griscom & Hotchkiss*, no. 28,918; wet hollows and pond-shores in limestone gravel-barrens, Cook Point, *Fernald & Gilbert*, no. 28,917, *Fernald, Gilbert & Hotchkiss*, no. 28,919; the first records from eastern America. See pp. 98, 99, 105.

P. EGALIKSENSIS Wormsk. Abundant in swales or on peat in the calcareous region from Sacred Island to St. John's Island. See pp. 54, 60, 75, 118.

GENTIANA PROPINQUA Richardson. Dominant on turf and

gravelly limestone shores and cliffs from Quirpon Island to Ingorna-choix Bay. See pp. 54, 60, 79, 80.

Lamium purpureum L. Completely occupying a garden-site at head of Mauve Bay, *Fernald, Wiegand, Long, Gilbert & Hotchkiss*, no. 28,958, new to Newfoundland.

LIMOSELLA AQUATICA L. Shallow fresh pool back of beach, Harbour Breton, *Fernald, Long & Dunbar*, no. 27,013. Otherwise known in eastern America only from the southeastern corner of the Labrador Peninsula. See p. 87.

GRATIOLA AUREA Muhl. Gravelly margin of Junction Pond, Whitbourne, *Fernald, Long & Dunbar*, no. 27,014; discovered at the same station in 1911, *Fernald & Wiegand*, no. 6143; the only station known in Newfoundland. See p. 86. The material collected on August 8, 1911, and August 25, 1924, is very dwarf and shows no sign of flowering.

(To be continued)

LICHENS OF THE GASPÉ PENINSULA, QUEBEC.

CARROLL W. DODGE.

(Continued from p. 207.)

- * CLADONIA FOLIACEA (Huds.) Willd. var. ALCICORNIS (Lightf.) Schaer. Cap Rosier, *Macoun*.
- C. APODOCARPA Robbins. Big Chimney, Mt. Mattaouisse, *Dodge 2842*, Logan range.
- C. BOTRYTES (Hagen) Willd. Big Chimney, Mt. Mattaouisse, *Dodge 2843*, Logan range.
- C. BACILLIFORMIS (Nyl.) Vainio. Matane, *Dodge 2841*.
- C. CYANIPES (Sommerf.) Vainio var. DESPREAUXII (Bor.) Th. Fr. Big Chimney, Mt. Mattaouisse, *Dodge 2844*, Logan range.
- STEREOCAULON TOMENTOSUM Fr. R. Cap Chat, *Dodge 2150*; Fernald Basin, *Dodge 2159*; gorge, northeast branch of R. Ste. Annes des Monts, *Dodge 2160*; R. Ste. Anne des Monts, *Collins 4657*; Mt. Albert, *Collins 4177*; Cap Rosier, *Macoun*.
- S. DENUDATUM Floerke. Lac Perré, *Dodge 2689*, Tabletop range; between Lac Mont Louis and north branch of R. Madeleine, *Dodge 2634*; Mt. Albert, *Macoun*.
- * S. CONDENSATUM Hoffm. Fink list.
- S. PASCHALE (L.) Ach. Mt. Albert, *Collins 4063*.